REMARKS

This Amendment is fully responsive to the non-final Office Action dated October 5, 2007, issued in connection with the above-identified application. Claims 22-42 were previously pending in the application. With this Amendment, claims 22, 25, 27, 28, 31-34, 36, 37, 40 and 42 have been amended; and claims 29, 30, 38, 39 and 41 have been canceled without prejudice or disclaimer to the subject matter therein. Accordingly, claims 22-28, 31-37, 40 and 42 are all the claims presently pending in the application. Favorable reconsideration is respectfully requested.

To facilitate the Examiner's reconsideration of the application, the Applicants have amended the specification and abstract. The changes to the specification and abstract include minor editorial and clarifying changes. A replacement abstract is enclosed. No new matter has been added by the changes made to the specification and abstract.

In the Office Action, claims 27 and 33 have been rejected under 35 USC 112, second paragraph, as being indefinite. Specifically, the Examiner alleged that the limitation "the result" in claim 27; and the limitation "the communication partner" in claim 33 lack proper antecedent basis. The Applicants have amended the above limitations in claims 27 and 33 to correct the lack of proper antecedent basis identified by the Examiner. Withdrawal of the rejection to claims 27 and 33 under 35 USC 112, second paragraph, is respectfully requested.

In the Office Action, claims 22-42 have been rejected under 35 USC103(a) as being unpatentable over Hoffberg et al. (U.S. Patent No. 6,400,996, hereafter "Hoffberg") in view of Michihiro (Japanese Publication No. JP2002-007020, hereafter "Michihiro"). As noted above, the Applicants have canceled claims 29, 30, 38, 39 and 41 rending the above rejection to those claims moot.

Additionally, the Applicants have amended independent claims 22, 36, 40 and 42 to further distinguish the present invention of the cited prior art. For example, claim 22 has been amended to recite, in relevant part, the following:

"An operation history utilization system which utilizes a user's operation history on a device, and provides the user with a service, the system comprising:...

an operation history reception unit operable to receive the operation history data transmitted from said device;

an operation history database unit operable to accumulate the received operation history data;

a pattern extraction unit operable to extract the frequent operation pattern from the operation history data accumulated in said operation history database unit;

a pattern database unit operable to store the extracted frequent operation pattern;

a pattern monitor unit operable to monitor whether or not a sequence of operation history data newly received by said operation history reception unit corresponds to the frequent operation pattern stored in said pattern database unit;

a service provision unit operable to provide the service according to the user's behavior predicted from a result of the monitoring performed by said pattern monitor unit;

a function database unit operable to store a predetermined relationship between an operation performed by said device and a function provided to the user in response to the operation, and

wherein said pattern extraction unit is operable to compare the operation history data accumulated in said operation history database unit with a predetermined relationship in said function database unit, convert the operation history data into a sequence of functions, extract a frequent operation pattern from the sequence of functions, and store the extracted frequent operation pattern into said pattern database unit" (emphasis added).

The features noted above in independent claim 22 are similarly recited in independent claims 36, 40 and 42. Specifically, claim 36 is directed to a method; claim 40 is directed to an apparatus; and claim 42 is directed to programs; all of which similarly recite the features noted above in claim 22.

The present invention, as recited in claims 22, 36, 40 and 42, is distinguishable over the cited prior art in that frequent operation patterns regarding a user's behavior are stored and used not only at the operation level but also at the function level. For example, the frequent operation pattern can be extracted from a sequence of functions, which are based of functions provided to a

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user based on the operation of a device. Therefore, more detailed information regarding a users' behavior can be used to predict a desired operation and a desired function that may be performed by a user at a given time. Based on this prediction, a service can be provided to the user that most accurately corresponds to a desired operation and function. The above features of the present invention are fully supported by the Applicants' disclosure (see Applicants' application, pg. 24, line 27 through pg. 25. line 14).

In the Office Action, the Examiner relied on Hoffberg in view of Michihiro for disclosing or suggesting all the features of claims 22, 36, 40 and 42.

Hoffberg discloses an adaptable interface for a programmable system that can be used to predict a function desired by the user based on a user's operation history. Specifically, the Examiner relied on Hoffberg at col. 126, lines 25-30, and col. 127, lines 15-41 for disclosing or suggesting the claimed extraction units or steps of claims 22, 36, 40 and 42. However, Hoffberg at col. 126, lines 25-30 discloses the use of prior history data of a user to provide information regarding a preference of the user. As described in Hoffberg, prior history data is analyzed in broad context in order to extract "trends" or "rules." Additionally, col. 127, lines 15-41 discloses a climate control system based on learned complex behaviors of a user, such as an individual's movement in a dwelling. Based on the foregoing, Hoffberg fails to disclose a prediction function based not only at the operation level but also at the function level, as in claims 22, 36, 40 and 42.

For example, Hoffberg fails to disclose or suggest at least the following features of the above claims:

1)   a function database unit for storing a predetermined relationship between an operation performed by a device and a function provided to the user in response to the operation; and

2)   a pattern extraction unit operable to compare the operation history data accumulated in an operation history database unit with a predetermined relationship in the function database unit, convert the operation history data into a sequence of functions, extract a frequent operation pattern from the sequence of functions, and store the extracted frequent operation pattern in the pattern database unit.

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Moreover, Michihiro fails to overcome the deficiencies noted above in Hoffberg. Michihiro discloses a technique of monitoring operations of a user, storing histories of the operations, and extracting a series of operations that frequently appears as routine processing (operation patterns) from the details of the histories (see e.g., Abstract). However, similar to Hoffberg, Michihiro appears to disclose a prediction technique based on a sequence of specific operations of the user, but fails to disclose a prediction technique based not only at the operation level but also at the function level, as in claims 22, 36, 40 and 42.

Thus, Michihiro also fails to disclose or suggest at least the following features of the above claims:

1) a function database unit for storing a predetermined relationship between an operation performed by a device and a function provided to the user in response to the operation; and

2) a pattern extraction unit operable to compare the operation history data accumulated in an operation history database unit with a predetermined relationship in the function database unit, convert the operation history data into a sequence of functions; extract a frequent operation pattern from the sequence of functions, and store the extracted frequent operation pattern in the pattern database unit.

Based on the above discussion, no combination of Hoffberg in view of Michihiro would result in, or otherwise render obvious, the present invention, as recited independent claims 22, 36, 40 and 42. Likwise, no combination of Hoffberg in view of Michihiro would result in, or otherwise render obvious, the present invention, as recited claims 23-22, 31-35, 37 and 38; based at least on their respective dependency form independent claims 22 and 36.

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the Office Action dated October 5, 2007, and pass this application to issue.

The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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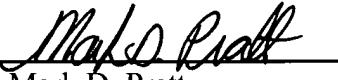
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January 7, 2008

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